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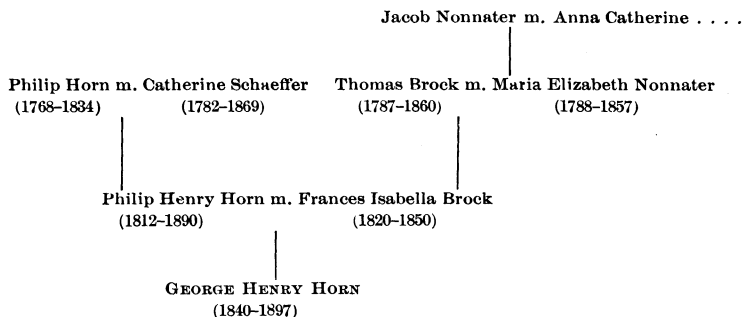
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A BIOGRAPHICAL NOTICE OF GEORGE HENRY HORN.

BY PHILIP P. CALVERT.*

The preparation of a biography must necessarily be influenced by the attitude which its subject assumed toward biographical notices in general. A friend of Dr. Horn writes: "He told me once that Professor Cope agreed with him that the story of their lives, outside the printed record of their scientific work, could be well and sufficiently told in one hundred lines. He added that he told Cope that he would like to write his (Cope's) life and he said with considerable pride that Cope replied, 'Horn, I would trust you to do it.' " Horn himself contributed a notice^{1st} of his friend and teacher, Dr. LeConte, which fills five closely-printed octavo pages of small type. Those who have been associated with him in this Society may therefore feel justified, to a certain extent, by his own example, if the space, which they deem requisite to preserve a fitting record of his life and works, considerably exceeds the limits he thought necessary.

GEORGE HENRY HORN, born in Philadelphia, April 7, 1840, was the oldest child of Philip Henry and Frances Isabella Horn. His descent may be most clearly shown by a diagram.



Philip Horn, Dr. Horn's paternal grandfather, was born in Steinbockenheim, about ten miles southeast of Kreutznach, in Rhenish

* See the note at the end of this notice for some explanations.

Prussia, December 15th, 1768. He came to America October 10th, 1798, and settled in Baltimore, Maryland, where he died November 15th, 1834. His wife, Catherine Schaeffer, was born in Carroll County, Maryland, April 17th, 1782, and died June 18th, 1869.

Their son, Philip Henry Horn, was born in Baltimore, December 25th, 1812. He came to Philadelphia about 1830, studied in the College of Pharmacy here, and established himself in the drug business, at the southwest corner of Fourth and Poplar Streets, until 1876, when he retired. The house and store which he built here was that in which his son, George Henry, was born. He was elected President of the Northern Liberties Gas Company, and was a director in various corporations until his death in 1890. He was an active member and church officer in the German Reformed Church on Race Street below Fourth until the Church was sold, when he united with the Reformed Church at Seventh and Spring Garden Streets.

Dr. Horn's maternal grandfather, Thomas Brock, was born in New York City, in 1787, of English Episcopalian parents. His mother died when he was quite young, and was buried in Trinity Church-yard, New York, after which his father removed to Toronto, Canada. In his early manhood Thomas Brock returned to New York, where he learned the trade of stone-cutter. Subsequently he came to Philadelphia, but he retired from business many years previous to his death here in May, 1860. He served in the war of 1812 on the American side. His wife, Maria Elizabeth Nonnater, was born in Philadelphia, at the southwest corner of Tenth and Arch Streets, in 1788, and died in the same city in October, 1857. She was the daughter of Jacob and Anna Catherine Nonnater, who came from Germany before the Revolutionary War and settled in Philadelphia. Jacob Nonnater took the oath of allegiance to the United States. His two sons, Stephen and Jacob, served in the war of 1812, and were highly respected citizens. All belonged to the German Reformed Church on Race Street below Fourth.

The daughter of Thomas Brock and Maria Elizabeth Nonnater, Frances Isabella Brock, also a communicant member of the same church, was born in Philadelphia, January 13th, 1820. She was of delicate health and died at the age of thirty years. Four children were the issue of her marriage to Philip Henry Horn, George Henry, the subject of this notice, and three girls, one of whom died at twenty-seven years, one at fifty-two, and one who survives her

brother. Philip Henry Horn had also, by a second marriage, a son and a daughter.

‘While George Henry Horn could not be called a sickly child,’ his sister writes, ‘he was not robust, and his fair hair and complexion rather gave him a delicate appearance. His very early education was begun in a small private school, about which I am not familiar. After that he went to the Jefferson [public] school at Fifth and Poplar Streets.’

In July, 1853, he entered the Central High School, then located on the east side of Juniper Street, below Market, facing Penn Square, but transferred, in the summer of 1854, to the southeast corner of Broad and Green Streets. The curriculum of those days included history, logic, rhetoric, elocution, English, Anglo-Saxon, Latin, French, German (abandoned for some years after September, 1856), geometry, trigonometry, surveying, navigation, astronomy, chemistry, physics, anatomy, physiology, natural history, moral science, political economy, drawing, writing, book-keeping and phonography. An elective system of studies was in vogue, making it possible for students to exercise a choice of courses to be followed. The Principal of the School was John S. Hart, and among the faculty were E. Otis Kendall, Henry McMurtrie, M.D., William and Edward W. Vogdes, Francis A. Bregy, James McClune and Rembrandt Peale. George Henry Horn was graduated from the School February 11th, 1858, with the degree of Bachelor of Arts. Among his classmates were John G. Johnson, our well-known lawyer, William H. Samuel, a Government Reporter in the military department, 1862-65, and author of poems, and the Rev. Henry Palethorp Hay, D.D., LL.D.

Soon after leaving the High School he matriculated in the Medical Department of the University of Pennsylvania, from which he received the degree of Doctor of Medicine, March 14th, 1861. His diploma bears the signatures of D. R. Goodwin Provost, John F. Frazar Vice-Provost, Caldwell K. Biddle Secretary, and of the Professors—William Pepper, Sr., Theory and Practice of Medicine, Joseph Leidy Anatomy, Henry H. Smith Surgery, Hugo S. Hodge Obstetrics, Samuel Jackson Institutes of Medicine, Joseph Carson Materia Medica and Pharmacology, and Robert G. Rogers Chemistry. His medical thesis was on ‘Sprains.’

Of this period of his life his sister writes: ‘I do not know of any honors gained by him either while at school, or in the University, and I think that his habit of observation made him in many things

self-taught. I believe that his close application to study from boyhood on through life was very detrimental to his (not overly robust) health, but he loved study and research and seemed to be ever grasping for something new, and as a boy, while the sports of boyhood attracted others, he was experimenting or studying, taxing both brain and body.'

No inherited taste for natural sciences is known to exist in Horn's case. His sister 'has no idea, whatever, what prompted his scientific turn—my impression is that it was innate.' Near the close of his life, on March 28th, 1895, in announcing, to the Entomological Section of the Academy of Natural Sciences of Philadelphia, the death of Dr. W. S. W. Ruschenberger, he 'reviewed the early work of the latter, principally the issuing of a science primer, which the speaker had known to be the direct means of interesting more than one person in the study of natural history; in fact, gave the speaker his first insight into Entomology.'* This probably refers to a compilation by Ruschenberger entitled, "Elements of Natural History, embracing Zoology, Botany and Geology," published at Philadelphia in 1850.

Horn's work in Zoology began while he was yet a student in the Medical School, and like that of his contemporaries Cope, Harrison Allen, H. C. Wood and others, took its visible origin from the Academy of Natural Sciences of his native city. Owing probably to the influence of his friend, William M. Gabb, later State Paleontologist of California, his attention was directed at first to the Coelenterates and the Bryozoa. His first scientific paper, "Descriptions of three new species of Gorgonidæ, in the collection of the Academy," presented at its meeting of June 19th, 1860, and published on page 233 of the Proceedings for that year, occupies hardly more than half a page. In "Descriptions of new Cretaceous Corals from New Jersey" by Wm. M. Gabb and Geo. H. Horn, page 366 of the same, hardly one page long, seven new species are characterized. Then followed "On Milne-Edwards' Synonymy of *Xiphigorgia setacea*" p. 367-368, and "Description of new Corals in the Museum of the Academy" p. 435 (five new species), presented October 2d, 1860. A "Monograph of the Fossil Polyzoa of the Secondary and Tertiary Formations of North America" by Wm. M. Gabb and G. H. Horn, M.D., published in the Journal of the Academy, volume v, part ii, pages 111-179, and dated July, 1862, apparently terminates Horn's work on the lower Invertebrates.

* "Entomological News," vi, p. 166.

The Entomological Society of Philadelphia, founded by Ezra T. Cresson, James Ridings and George Newman, had been organized February 22d, 1859, and of this association Horn became a member July 23d, 1860. Dr. John L. LeConte, then the foremost American coleopterologist, had been one of the organization members, but Horn, although frequently and not incorrectly styled the pupil of LeConte, does not appear to have made LeConte's personal acquaintance until after his own work on insects had begun. Mr. Charles Liebeck states that Dr. Horn once told him that the occasion of his first meeting with LeConte was the publication by Horn⁵ of the description of *Margarinotus guttifer*; this attracted LeConte's attention, caused him to seek out Horn, and so the foundation of their long friendship was laid. The first fruits of Horn's connection with the Entomological Society soon appeared in "Descriptions of new North American Coleoptera, in the Cabinet of the Entomological Society of Philadelphia" presented to the Academy of Natural Sciences December 18th, 1860, and published in the Proceedings for that year, pp. 569-571. This, his first entomological paper, describes seven new forms, the first being *Nomaretus imperfectus* from Hampshire County, Virginia.

In the meantime the Civil War had broken out. On the ninth of June, 1862, he resigned as a member of the standing committee of the Society on Coleoptera, to which he had been elected December 9th, 1861, and went to California. Under date of February 26th, 1863, he was commissioned, by Governor Leland Stanford, Assistant Surgeon in the Second Cavalry, California Volunteers, and took the oath of allegiance at Camp Independence, Owen's Valley, California, March 1st, 1863. On July 14th, 1864, he became surgeon of the First Infantry Regiment, California Volunteers, "remaining in that position until the term of service of the regiment expired, December 3rd, 1864." Under date of May 18th, 1865, he was commissioned Assistant Surgeon, with rank of First Lieutenant, in the Second Cavalry again, and took the oath at San Francisco, May 22nd. August 26th, 1865, his commission as Surgeon in the Second Infantry Regiment, California Volunteers, with rank of Major, was signed by the Governor, and subscribed to by Horn at San Francisco, September 23d, 1865. "His service terminated with that of the staff of his regiment April 16th, 1866."

These years in the West gave him many opportunities for the collecting and observing of insects, and allusions thereto occur in a

number of his later writings. The Proceedings of the Entomological Society of Philadelphia record the reception of a letter written from Camp Independence, July 1, 1863, giving an account of his researches on insects in that region.

He tells us elsewhere^a: "I went to North-eastern California, near the head waters of Pit River—a tributary of the upper Sacramento. Near Fort Crook I saw the first living specimens [of *Amphizoa insolens*], though so rare and difficult to be obtained, that I was satisfied with the securing of a few specimens, without risking the loss of any in the observation of their habits. From Fort Crook I went to Surprise Valley, on the boundary line between California and Nevada. Here I found them very abundant, as well as on the western slope of the Sierras, in the creeks forming the three head branches of Pit River." Other places he mentions as having visited are Yuma, Gila Bend, Maricopa desert, Temescal and Fort Grant, in Arizona.

He returned to Philadelphia in 1866, was elected President of the Entomological Society December 10th, and, on December 26th, presented to the Academy the first of his results "accumulated during a four years' residence in California and the adjoining territories."⁶ The long series of papers on the Coleoptera, destined to appear for nearly thirty successive years, was thus begun, while at the same time he commenced to build up a growing and successful practice in medicine, more especially in obstetrics. A note-book, in his own handwriting, entitled, "Obstetric Memoranda," records the cases he attended at a later period, and it may be of interest to quote the totals for each year to indicate the extent of his practice: 1879 28, 1880 31, 1881 37, 1882 26, 1883 31, 1884 33, 1885 58, 1886 55, 1887 20 in the first six months, and then the record ends.

In the Spring and Summer of 1874 he paid a visit to Europe, was at the meeting of the Entomological Society of London on June 1st, examined the collections of the British Museum, spent considerable time in Paris, where he is recorded as having attended the meetings of the Entomological Society of France on July 8th and 22d, August 26th and September 9th, and made the acquaintance of many European entomologists.

A second and a third visit to Europe were made in the summers of 1882 and of 1888 respectively. In the former year he was with Westwood in Oxford; and Dr. David Sharp in Scotland; in Paris, where his name appears in the minutes of the Entomological Society

as present at the meetings of June 14th and July 26th, in Heidelberg, in Stettin at the Entomologisches Verein on June 22d, and in Berlin. Of the last visit he wrote, on October 9th, 1888, "I arrived home safely September 30th after a very pleasant visit to my friends in Europe. About the middle of July I went to Stettin and spent several days with Dr. Dohrn In the Berlin Museum they were very kind to me and I had good chance to study the types of Erichson. I can safely say that I have now seen more genera of Melolonthide Scarabæids than any other person." This year his appearance at the "seances" of the Society in Paris on June 27th and August 8th was in his capacity as an Honorary Member.

The minutes of the Board of Trustees of the University of Pennsylvania in Philadelphia, for November, 1889, record that a communication was received from the Faculty of Biology, recommending the establishment of a Professorship of Entomology and suggesting Dr. Horn as incumbent. The recommendation was adopted and an election set for the next meeting of the Board. Accordingly, Dr. Horn was elected Professor of Entomology, December 3d, 1889, and his acceptance is recorded in the minutes for January 7th, 1890, along with that of Edward D. Cope, who had just been elected to the chair of Mineralogy and Geology. Dr. Horn never gave any instruction under this election, although for some years the announcement in the University Catalogues read "Biology 21. Entomology. The General Anatomy of Insects, with Practical Exercises in Systematic Coleopterology." Subsequent to his death the Trustees adopted a minute suitable thereto.

In the Spring of 1893, Dr. Horn revisited California, and was introduced at the meeting of the California Academy of Sciences at San Francisco, May 1st.

In 1895 he began to experience considerable difficulty with his hearing, and his friends noted, with pain, other signs of increasing feebleness. October 26th, 1896, saw him for the last time at our entomological meetings, although he continued to visit the rooms of the Columbia Club, a social organization, of which he was a member. While engaged in a game of cards here on December 26th, 1896, he was stricken with paralysis of the left side, although he did not entirely lose consciousness. He was removed to the house of his half-brother, at 942 Franklin Street, where he had resided for a number of years, and received the best of medical attention and careful nursing. He recovered sufficiently to converse with his

friends, to read, write and smoke, but he appreciated the fact that his working days were over. In May, 1897, he removed to a fishing-club house at Beesley's Point, New Jersey, and spent much of the Summer out of doors. In November he came to Philadelphia to attend a reception by the American Philosophical Society to Fridthof Nansen, and soon after returned to the Jersey coast. He had invited a few friends to spend Thanksgiving day, November 25th, with him, when the end came suddenly and unexpectedly on November 24th. The funeral, on November 27th, at the house on Franklin Street, Philadelphia, was attended by many friends and representatives of the associations of which he was a member, and the Rev. Dr. Henry C. McCook delivered an eloquent and appropriate address. His body was buried in his father's lot in Central Laurel Hill Cemetery.

In considering Horn's work reference must be made to his relation to LeConte. Horn wrote of him ¹⁵¹: "We all knew him as a cultured scholar, a refined gentleman, a genial companion, a true friend. To me he was more. For nearly twenty-five years our association has been of the most intimate nature. I sought his advice and instruction as a neophyte in entomology, finding a welcome which I had no reason to expect.* Our friendship ripened to an intimacy never shadowed by the slightest cloud."

Some of the following pages will describe their association in work, and the contrast which the two men presented. A foot-note to LeConte's last paper, "Short Studies of North American Coleoptera No. 2" (Transactions Am. Ent. Soc. xii) states that the manuscript, left in a fragmentary condition by the author at his death,—LeConte died November 15th, 1883,—was completed by G. H. Horn. LeConte's collection was bequeathed to the Museum of Comparative Zoology at Harvard College, and of this Horn wrote ²⁵⁹: "Some months after the death of Dr. LeConte I considered it a duty to assist in fulfilling his will by suitably preparing his cabinet and transporting it to the Museum at Cambridge. Annually since I have made one or two visits for the more accurate study of its types after a thorough study of my own material had been completed. In that collection I find not only the bare facts, for which I seek, but much besides. In the more than thirty years of our association there is not a box which has not been before us the topic of discus-

* The original has "except"—surely an oversight in proof-reading.

sion or for consultation. Every one recalls its memories, and even particular specimens recall incidents of interest. To me such a visit is, therefore, more than the comparison of specimens, it puts me again in touch with a friend. . . . I regret greatly that many of the traditions of the collection are known only to me. Frequently specimens have something about them indicating their origin, and types from Chaudoir, Mannerheim and others, even including Dejean, may be known thereby. As many of these traditions concern individual specimens it is hardly possible to give any general data. In a collection of the character of that of LeConte it is important that no label attached to a pin, however unimportant it may seem, should be removed."

We will not attempt to consider Dr. Horn's published entomological writings in detail. The accompanying bibliography by one of his intimate friends, Mr. Samuel Henshaw, furnishes a list believed to be complete. By far the greater number of them deal with the Coleopterous fauna of America north of Mexico, but a few treat of that of Central America and Mexico. The majority, moreover, are written from the monographic, systematic standpoint. They are estimated by Prof. Smith to contain studies and actual characterizations of by far the greatest number of the 1900 genera accredited to North America, including 154 proposed as new, and descriptions of more than half of the 11,000 species (1582 new).

We cannot do more than endeavor to indicate those papers which, in the judgment of Coleopterologists, are the most important. Mr. Henshaw writes: "I consider his papers on the Carabidæ¹²⁸ (1881) and Silphidæ¹¹² (1880) among the most valuable. It is hard to pick out a few when nearly all have a uniform standard of excellence. His *Philonthii*¹⁵⁵ (1884), *Chlæniini*⁷² (1876), *Dasyllidæ*¹⁰⁷ (1880), *Chrysobothris*¹⁸² (1886), and *Aphodiini*¹⁹⁰ (1887) show some of his best work."

Prof. Smith has expressed himself similarly: "When so much is excellent it is difficult to assign comparative rank to the published work; but perhaps that on the genera of Carabidæ, 1881, may be considered the best. It was certainly in some respects the most thorough, the most revolutionary and the most convincing; for his conclusions have secured practically universal acceptance. His work on the Silphidæ in 1880 while not so brilliant, was even a greater tax on his powers, and I am not certain that he did not himself feel most proud of this."

Certain it is that it was the paper on the Carabidæ that called forth the most extended notices. In the Transactions of the Entomological Society of London for April, 1882, Mr. (now Dr.) David Sharp reviewed and criticized it. As important discoveries and improvements in the classification made by Dr. Horn, Mr. Sharp considered the adoption of three subfamilies, viz., Carabinæ, Harpalinæ and Pseudomorphinæ, instead of two, viz., Carabinæ and Harpalinæ, as had been heretofore done; that the structure of the second coxal cavities of *Mormolyce* is as in the Dytiscidæ; and the separation of the Haliplini and *Pelobius* from the Dytiscidæ. On the other hand, the placing of *Mormolyce* with the Harpalinæ, in view of Dr. Horn's own discovery, appeared to the reviewer very strange and indicated that "the talented American" had not "the courage of his convictions, or rather of his discovery," to isolate "*Mormolyce* in his classification, as it is in nature." The opinion was expressed that the number of tribes of the Carabidæ would be much increased by more extended studies of extra-North American forms, and that such studies would also show the necessity of modifying Horn's statements as to the structure of skeletal parts, as the method relied upon by him—maceration in caustic potash—appeared to be "a very unsafe proceeding." Finally, the reviewer dissented at length from the statement that the structure of the Gyrinidæ seems "to be so plainly adepagous as to leave no room for doubt." The concluding paragraph reads "I must not pass from the consideration of Dr. Horn's paper without making some apology for the rather critical nature of my remarks, but this is scarcely necessary, for we all know that he is one of the most unprejudiced admirers of truth and accuracy, and I am convinced that he will no more be likely to find fault with me for discussing some of his conclusions than the lamented Chaudoir would have been to disagree with him because of his criticisms; but I cannot conclude without pointing out that, although we are still far from possessing a perfect classification of the carnivorous Coleoptera, yet Dr. Horn's paper shows that we are on the right road for getting one; and his contribution will undoubtedly prove to be a considerable assistance to those who, like himself, will have the courage and perseverance to aid research in this direction. Such a large amount of original observation as is recorded in the definitions of the tribes and remarks on the subordinate groups and in the six plates closely filled with drawings of the trophi, cannot but be most useful to future systematists, and we may give our hearty thanks to Dr. Horn for the work he has accomplished."

Both the "Synopsis of the Silphidæ" and the "Genera of Carabidæ" were reviewed by Dr. C. A. Dohrn in the *Stettiner Entomologische Zeitung*. Of the latter he wrote in 1882: "Few among living and working Coleopterologists can boast of uniting so many favorable qualifications for this work in their own persons as the author. From his place of birth and from his intimacy with the 'Altmeister,' Dr. John LeConte, he is, like the latter, completely at home in the North American beetle fauna; his visit to Europe, his acquaintance with foreign languages, his correspondence—have enabled him to deal intelligently with the views of others on the subject in hand; his 'coleopterographic' authority within and without his own country is so firmly founded as not to expose him to the temptation of wishing to attract attention by paradoxes. Self-evidently I content myself with reviewing Horn's work by extracts. . . . From this, and from the succeeding chapter, I select in order to show our readers (as I hope) how deeply and thoroughly the author has comprehended his subject and how conscientiously he has proved and tested the ideas of his predecessors." Nine and a half pages of quotations sufficed, in Dohrn's view, to show how profoundly Horn "had grasped his subject, and how carefully he had executed it. Whether any one of the few who, with similar inclination and perseverance, have devoted themselves to the classification of the overwhelming numbers of the Carabidæ, may be in position to offer valid objections to the author, the future will teach. In the mean time I must content myself with directing the attention of our readers to this highly meritorious, able work. Perhaps some of these, who see the systematic value which Dr. Horn lays upon the 'supraorbital setæ,' will recall the thoughtful remarks of Brunner v. Wattenwyl on Classification where he speaks of the 'preservation of indifferent organs in changes of form.' (Jahrg. 1881, p. 232)."

But the most enthusiastic notice of the Carabid paper was that by A. Preudhomme de Borre, at that time Conservator of the Musée Royale d'Histoire Naturelle at Ixelles, a suburb of Brussels, read the fourth of March, 1882, at the meeting of the Belgian Entomological Society. It began "At the end of the year 1881 there arrived from America an extremely remarkable work which, we think, will place its author, M. G. H. Horn, among the number of masters of present Entomology. Under a modest title of such nature as to make us wrongly believe that the work is written as one of those local faunal studies which too often absorb our confrères in the United States,

this memoir gives us a complete systematization of the Carabids, which is assuredly the best yet produced on this subject, and which appears to us to merit adoption by all museums and collections, without pausing, perhaps, at some doubtful points of detail—a thing inevitable in such a work, man not being infallible.” A dozen pages of extract and technical comment succeed. Then a last one shows more clearly, perhaps, than any of our other citations the impression the work made upon a working Coleopterologist of the time. “The work of M. Horn is much more developed than this synopsis which I have extracted and which is its substance. The characters of each tribe are also given with much elaboration, as well as indications of the American, and often other, genera that the author refers to them with the reasons for so doing. Many of the genera take places quite different from those in which we are accustomed to see them. In the arrangement of the tribes we have already seen that some affinities consecrated by an almost general usage are entirely broken. I ought to say with justice, for all those who have looked into the subject know it, that in our classification there were only too many traces of the pitiable study that may be called parish entomology, that is, that the first authors were directed by an insupportable prejudice that our little Europe was to furnish the exact abridgment of the nature of the globe and the possibility of formulating the system of that nature by it alone. To return to the genera, it is probable that there are some points in their arrangement to be contested. The author, on his side, has perhaps not quite thoroughly studied everything that was not at his own door. He has, nevertheless, treated his subject with a breadth of vision which we do not always find in American authors, who also absorb themselves too much in these territorial studies of which I have spoken, studies which, moreover, bear on a territory vaster than our little Europe. But if some traces of this Americanism are found in M. Horn’s work, they are quite involuntary I think, and everywhere one reads between the lines the desire to observe, to know, and to regulate for the entire planet. All that is wanting to this work perhaps is to have been preceded by some months’ study in the public and private collections of the Old World,* where may be found some scientific treasures which the dollars of the New have not yet transported beyond the Atlantic. Still a word, a word of lively approbation. For how

* This remark seems to indicate that M. de Borre did not know of Horn’s visit to Europe in 1874.

many others would not such a work have been the occasion to change the names and to resurrect some forgotten dead, to render the synonymy more and more difficult. M. Horn, like his compatriots generally and the English, shows himself a man of practical sense. His names are, above all, those consecrated by usage, by the authority of the classic monographs, by the authors of great descriptive works who have something else to do than to search for questions of 'anteriority,' to seek if the name consecrated by all the great authors had not been preceded, perhaps by a month, by some other fallen in the dust. For this we congratulate him warmly."

The most general work in whose production Dr. Horn was concerned was the 'Classification of the Coleoptera of North America'¹⁴² (1883). An analysis of it is given by Dr. Scudder in his biographical notice of Dr. LeConte,* and it has been characterized by Prof. Smith as representing the ripe experience of Dr. LeConte, the broader student of nature, and the critical and accurate knowledge of technical detail characteristic of Dr. Horn.

Two notices of this work are perhaps less familiar, to American readers at least, and we venture to quote from them. One of these was by Dr. Dohrn in the *Stettiner Zeitung* for 1884. Like his notice of Horn's Carabid paper, it consists in the main of translated extracts, but his concluding paragraph is directly concerned with our present subject: "After this introduction, which comprehends the entire domain of the classification of known beetles, the authors treat only of the families living in North America. Needless to say that Dr. G. Horn was eminently fitted for this work, for upon his younger shoulders had the older master, in the course of his later and disease-stricken years, transferred the greater and heavier part of the tiresome labor. I repeat that Dr. Horn's approved pen has furnished a work which could be written only by one having access to rich and extensive material, and whose iron industry and inborn talent enabled him to marshal this material and make use of it in a brilliantly scientific manner. Since the overwhelming majority of the genera of beetles occurring in North America are represented also in the Old World, it is self-evident that the present volume is to be strongly recommended to the close study of all 'Coleopterophiles.'"

The second notice of the 'Classification' to which we have re-

* Proceedings of the National Academy of Sciences, 1884; Transactions of the American Entomological Society vol. xi.

ferred is that by the Rev. A. Matthews, known for his researches on the Trichopterygidæ. "European entomologists are often impressed with the idea that their scientific brethren on the other side of the Atlantic are so embarrassed with the riches of their own fauna that they are comparatively unacquainted with the productions of the eastern hemisphere. But such a notice indicates a very imperfect comprehension of American intellect and American resources. No reason can be given to prove that a species inhabiting any part of the Old World should not be as well known in Philadelphia as in London, Paris, or Berlin; and much less is there any reason to suppose that American entomologists are not, at the very least, as well able to appreciate its affinities as the most erudite of their European contemporaries. . . . In such a state of things [favorite but antiquated systems] a revision of our systematic classification was imperatively called for; and this work has been inaugurated by the recent publication of the 'Classification of the Coleoptera of North America,' by Dr. LeConte and Dr. Horn.' . . . the comprehensive lines on which it has been constructed will include (with, it may be, trifling modifications) the Coleoptera of both sides of the world. . . . "The basis on which the system is founded, that of the entire external skeleton, is more consonant with the general scope of systematic arrangement in the higher classes of the animal kingdom, and much less liable to error than the tarsal or any other system which rests upon special organs alone. It is a system which only requires careful study to ensure approval; it has conferred a lasting benefit on science and much honor upon its authors. To assert that it is perfect would be to assert more than man can accomplish. It is at the least a long step in the right direction, and opens a path which must lead to further important results." (*Annals and Magazine of Natural History*, London, September, 1883).

An examination of Mr. Henshaw's Bibliography will show that by far the greater number of the papers listed appeared in the *Transactions of the American Entomological Society*. Unquestionably, this was the journal in which Dr. Horn took the greatest pride and interest, and for many years he served upon the Publication Committee having it in charge. His preference was the more marked from the circumstance that since 1866 nothing from his pen, other than annual reports, appears in the *Proceedings of the Academy of Natural Sciences*, although he was Corresponding Secretary and a member of the Publication and Finance Committees of this latter

institution for many years. Other papers are contained in the Proceedings of the American Philosophical Society, of which, also, he was a Secretary and Librarian at the time of his death.

In the latter part of 1889, when the Entomological Section of the Academy of Natural Sciences and the American Entomological Society decided to establish a monthly journal devoted to their specialty, the weight of Dr. Horn's authority was naturally desired to aid the new enterprise. His name consequently appeared on the cover of the first number of "Entomological News" (January, 1890) and the contents included a short synonymical article on *Cryptohypnus* from his pen. Later issues contained short papers on variation, as that on "*Trichodes ornatus* Say" (Jan'y, 1891), which was evidently intended as a warning to those disposed to rush into print with descriptions of new species based on color differences, and those on variations in *Cicindela* (Feb'ry, 1892), to which we shall again refer, in *Dorcas* (April, 1892), and in *Amblychila* (November, 1893). Each of the first seven volumes contains some brief contributions from him, and the proceedings of the Entomological Section and Society published therein afford glimpses of his entomological studies from month to month. Finally, the "News" contains what seems to be his very last Coleopterological note—of six lines only—dealing with the synonymy of some North American Buprestids, and which appeared in October, 1896.

In describing the relations of LeConte and Horn Prof. Smith says: "At first there was some friction between him and the younger man, who was very positive in many cases where the older, more experienced student was inclined to be conservative. . . . Dr. LeConte was by all odds the broader man; his knowledge of nature at large was much wider, and he saw his speciality, the Coleoptera, much more truly in their relation to the other orders of insects, and this class in its relations to the rest of the animal kingdom. Dr. Horn was much more completely a specialist, with little interest outside the Coleoptera, but in this knowledge of detail was infinitely greater." These characteristics, and especially the latter, he retained throughout life. Little of general interest to the zoologist is to be found in his writings. Upon some few general topics, nevertheless, he did touch, and to his statements on these we shall devote some space. Prof. Smith is probably correct in stating that "His monographic and revisional papers are almost all built with the evolutionary idea constantly in mind" (Science).

In treating of Dr. Horn's connection with the journal "Entomological News" we have mentioned a number of short papers which he published therein concerned with variation in Coleoptera. From the most important of these, published in February, 1892, dealing with *Cicindela* ²³⁷ we extract: "Recently the subject of variation in coloration has been discussed before the Society of American Naturalists with the view of eliciting an expression as to whether color variation proceeded in a regular course, or was hap-hazard and accidental. My observations have been that variation proceeds in regular lines, easily demonstrable with sufficient material, produced by external influences which are at present but partly understood. There is probably no branch of zoology better fitted to illustrate this point than Entomology, from the abundance of species and the frequent occurrence of genera with large numbers of species in which a greater or less similarity of marking is observable." After showing the various lines along which color variations on the elytra exist, illustrated by a plate, he refrains, with his usual caution, from any speculations suggested by these facts, as follows: "In view of all the facts here presented the question might be asked, why do some species vary while others do not? While this matter is worthy of some thought, it is not possible to give a satisfactory answer. Some species doubtless vary from climatic causes. A notable instance will be seen in *hæmorrhagica*, which extends from San Diego and Yuma in California northwards to the headwaters of the Yellowstone, passing through about all possible varieties of climate and habitat, from sea-coast to mountain. On the other hand *hirticollis* occurs from Hudson's Bay to Arizona without variation, and the specimens of *lepida* from the New Jersey shore are not separable from those found in Nebraska. It seems hardly possible to make any generalizations on the subject. Doubtless the coast species vary to a greater extent taking them collectively than do the inland species, but it is impossible to go further in speculation as too many exceptions arise on all sides." Doubtless the conclusion which most appealed to him was that which he expressed in his closing sentence: "Should the method of thought which gave rise to the preceding remarks produce in some others thoughts as to the possibilities of variation, not only in color, but almost equally in form and sculpture there would be less synonymy to be corrected and a more truly scientific basis established for species." This paper has been reprinted in part by Prof. Cope, in his 'Primary Factors of Organic

Evolution' (Chicago, 1896), as evidence that variations of specific characters "are of certain kinds or in certain directions."

As early as 1868, in a brief communication,¹⁸ "The importance of large series of this [*Amphizoa*] and other genera was urged on all who have collections, as the only means of arriving at a knowledge as to what constitutes a species." And in his Revision of *Lachnosterna*¹⁹³ p. 209, he remarks, "As it is never profitable to describe isolated species in troublesome genera, it was better to accumulate as large series as possible in order to determine the limits of variation, and thereby fix the value of many described from uniques." Nevertheless, it is quite true that many of his specific descriptions are based upon a single specimen. On the other hand, Prof. Smith's subsequent studies on this very *Lachnosterna*, published in Horn's lifetime, showed that Horn had united, as one species, several forms structurally distinct.

His habitual refrain from generalizing was shown even in his young manhood for, referring to the discovery of a species of *Pseudomorpha* in California, he remarks¹² that it "adds another fact to the already inexplicable law of distribution of genera in Australia, South America and California."

At the meeting of the Entomological Section January 10th, 1879, "Dr. Horn exhibited two Lepidopterous insects from Costa Rica of widely separated affinities, showing between themselves a really wonderful mimicry, not only in color, but also in form; so close, indeed, was the resemblance that either might have been placed among a number of specimens of the other, and without a careful glance, would not be thought distinct. The one was a *Heliconia*, the other a *Callimorpha*. The group to which the former belongs is rarely or never attacked by birds, and the mimicry belongs to the 'protective' class. In regard to matters of 'mimicry' so called, Dr. Horn thought the idea had been and is pushed too far. Many cases of this kind should be considered Nature's reproduction of an idea, so to speak, which had been developed elsewhere, and that such instances do occur among the myriads of insects is not very remarkable. Instances of equally wonderful 'mimicry' could be cited among Coleoptera where it is not protective or anything else than a mere close resemblance, for example *Amphizoa*, from California, and *Nyctipetus*, from South America."⁹³

He did not fail to perceive the importance of studying the early stages of beetles, and at the meeting of the Entomological Society

of Philadelphia March 11, 1861, "called the attention of the members to the necessity of collecting the larvæ of insects, as the study of that portion of Entomology was of vast importance to the scientific world" (Proc. Ent. Soc. Phila., i, p. 2.). Twenty-seven years later he wrote:¹⁹³ "The larvæ of Coleoptera will doubtless yield facts of taxonomic value, and may aid in settling disputed relationships among the imagines. . . . At present too little attention seems to be paid to study of this sort, and every student of classification should consider it a duty to describe any authentic larva known to him with such figures of form and detail as may be useful hereafter."

A remark bearing on the inheritance of acquired characters occurs in a passage treating of the absence of the tarsi in the fossorial *Ateuchus*, *Deltotilum* and *Phanæus*: "It is evident that some other cause than inherited mutilation must be sought for to explain the loss of the tarsi in these insects."^{214a}

Dr. Horn was disinclined to long and continued argument. From remarks which he made at times in conversation, he was evidently influenced in this regard by the example of Henry Walter Bates, the naturalist of the Amazons, whom he knew and esteemed highly. His attitude is expressed in his own words in a brief statement concerning the anomalous Lower Californian Coleopter *Vesperoctenus flohri*: "I do not propose to continue any argument, having said all that I deem necessary on my own part, and will leave to others the adoption of either view."²⁵⁴ And again, "No literary work is more distasteful to me than controversy, especially when there is a personal element."²¹⁸ Yet he did engage in argument when he believed that one side of a case had not received its due, or that some principle, other than the scientific issue, was concerned. His papers on *Vesperoctenus* and *Pleocomma*¹⁹⁶ are examples of the first of these beliefs, the privately-published "Reply to Dr. C. V. Riley"²¹⁸ illustrates the second. The prefatory remarks to the last-mentioned give another glimpse of his character in the words: "In publishing my reply to Dr. Riley privately I wish to express my disapproval of the use of the pages of scientific periodicals for the ventilation of personal grievances to the exclusion of more useful matter."

One charge brought against him, however, never failed to arouse his resentment, and this also he has expressed in the paper on *Vesperoctenus*: "My principal object in writing these lines is to object to a method of argument on Mr. Gahan's part, and it is not the first time that the method has been used by my English friends in argu-

ment against myself and Dr. LeConte. It is the assumption that we have no collections for reference beyond our own species." Even such well-disposed critics as Dr. Sharp and M. de Borre had suggested as much in their above-quoted notices of the Carabid paper, so that the distinct denials of any such prejudices made by the Rev. Mr. Matthews (in the Review of the 'Classification') and Dr. Dohrn (notice of the Silphid paper) must have been welcome reading to the subject of this biography.

We have already quoted the opinions of two well-known American Coleopterologists—Mr. Samuel Henshaw and Prof. John B. Smith—on Dr. Horn's work, and both of these have already published some notices on the same subject. From letters with which two English authorities have kindly favored us, we are glad to quote.

Dr. David Sharp writes from the University Museum of Zoology, Cambridge, England, Jan. 24th, 1898, "The chief difficulty we entomologists have to contend with in comparison with the students of other branches of Zoology is the enormous number of specific forms that have to be examined previous to the establishment of any trustworthy generalisations. Dr. Horn did a great deal of that sort of work in a satisfactory if not final manner. The difficulty mentioned above leads inevitably to the study of entomology by faunal limits. Dr. LeConte's work—genius as he was—was limited almost absolutely in that manner, but Horn perceiving the discrepancies that were thus created, and also the evils of incompatible classifications in a single group set to work to gain a knowledge of the extra-American forms, and as a result he did good work of a general character by combining the classifications existing in America with those in vogue in Europe, and as a result producing papers of a wide general value, such as that on the Adephaga, and that on the Silphidæ. Add to this that he felt a genuine and natural interest in his work, and was therefore master of the patience indispensable for any satisfactory study in entomology, and I think you will have in mind the chief points that have established his reputation as a great Coleopterologist."

Mr. G. C. Champion writes from London, January 25th, 1898, "Dr. Horn had an excellent eye for picking out the important salient characters of genera and species, as well as for generalizing in matters of classification in which he showed exceptional powers. That his deductions were sound is proved by the fact that most of his work has been generally accepted. His long outstanding friendship

for LeConte perhaps hampered him at times, as he endeavored always to gloss over any lapsus LeConte may have made. I am not aware that he introduced any particular improvements in the study of Coleoptera, except, perhaps, that of constantly giving brief synoptic tables of genera and species based upon their more important characters, without introducing unnecessary details in which the main points were lost. This remark applies also to his descriptions. He must of course be regarded as a follower of LeConte, from whom his earliest ideas on the subject no doubt originated. Personally I had a great regard for him, as he was always ready to exchange ideas or communicate specimens whenever called upon, no matter how frequently, and during the preparation of my work on the Central American Heteromera and Elateridæ we were constantly corresponding. During his last visit to Europe I had the pleasure of making his personal acquaintance. I regard Dr. Horn as the best Coleopterist you have ever had, and he will be very much missed by all who take an interest in the very rich beetle fauna of America."

His sister writes: 'Dr. Horn's height was five feet, eight-and-a-half inches; he was slender and rather delicate in build, of fair, pale complexion, with dark brown hair. Of nervous temperament, his energy was boundless, enduring fatigue and loss of rest, which was apparently unnoticed by him and resulted as you know. He had a remarkably retentive memory, was always studious from childhood, quick to learn and ready to retain, and capable of imparting his knowledge to others. In all matters of judgment he was very independent, and adhered to his opinions. In regard to character he had marked originality. His fondness for children was so great that one might almost say a little child could lead him. His mechanical talents were quite marked. He had good practical business habits and was good at figures. He was fond of music without any particular talent' therefor.

Although a systematist in Entomology, he was not so in his "den," and Prof. Smith has given an amusing account of the disorder of his combined working- and bed-room. He possessed the salt of humor, and, whether originator of the expression or not, introduced among us the phrase, "mihi-itch" to designate the condition of those whose ambition is chiefly to describe new species. If not an artist

in the subjective sense, he was quite skillful with his pencil and illustrated most of his writings.

In politics, like his father, he was a Republican and held at least one elective office, that of a School Director in the Twelfth Ward of his native city, to which he was chosen February 17th, 1880.

In early years he attended the German Reformed church and Sunday-school, of which his parents were communicants. His sister adds: "His early religious training seemed to make no lasting impression on his maturer years. Mingling, as he did, with scientific friends, religion seemed to be lost in science and he never became a church member. While he had a great respect for the church and friends among the clergy, he held his own religious opinions."

He never married.

His collection of Coleoptera, whose present extent has not been estimated, his entomological library amounting to about 950 volumes, and the sum of five thousand dollars were bequeathed by him to this Society, one thousand dollars to the Academy of Natural Sciences, five hundred dollars to the American Philosophical Society.

Of his connection with our own body it remains but to add that he served as President from December 10th, 1866, to December 14th, 1868; as Vice-President from December 13th, 1869, to December 10th, 1883, and as President from this last date until his death. He was a member of the Standing Committee on Coleoptera from December 14th, 1868, until the discontinuance of the Committee in 1884, and frequently served on the Finance and Publication Committees.

Of the Entomological Section of the Academy of Natural Sciences he was Vice-Director from its foundation, May 12th, 1876, to December 12th, 1883, and Director from this latter date until his death.

Fitting it is to close with these words, adopted December 23rd, 1897,—*"The American Entomological Society hereby records its deep sense of the great loss it has sustained in the death of Dr. George H. Horn, a member for thirty-seven years and its President for the last fourteen years. It gratefully acknowledges the lustre which his attainments and honors reflected upon this Society in his connection with it, and the benefits which his learning and liberality conferred. It rejoices in the successes he attained and cherishes the memory of his labors which form so large a part of the progress of Entomology in America."*

List of Degrees and Memberships in Scientific Bodies held by
Dr Horn :

1858. Feb. 11.—Bachelor of Arts, Central High School, Philadelphia.
 1860. July 23.—Member, Entomological Society of Philadelphia (name changed
to American Entomological Society 1867).
 1861. Mar. 14.—Doctor of Medicine, University of Pennsylvania, Philadelphia.
 1863. Feb. 12.—Master of Arts, Central High School, Philadelphia.
 1866. July 31.—Member, Academy of Natural Sciences, Philadelphia.
 1868. Oct. —Member, College of Physicians, Philadelphia.
 1868. Nov. 10.—Honorary Member, Entomological Society of Ontario.
 1869. Jan. 15.—Member, American Philosophical Society, Philadelphia.
 1872. Dec. 4. —Member, Société Entomologique de Russie, St. Petersburg.
 1877. May 3. —Member, Entomologisches Verein, Stettin.
 1880. Dec. 22.—Member, Société Entomologique de France, Paris.
 1884. Feb. 8. —Corresponding Member, Biological Society, Washington.
 1884. Oct. 4. —Member, K. K. zoologisch-botanische Gesellschaft, Vienna.
 1884. Dec. 13.—Honorary Member (ten in all), Entomologisches Verein, Stettin.
 1884. —Member, Société Française d'Entomologie, Caen.
 1885. Mar. 11.—Honorary Member (ten in all), Société Entomologique de France,
Paris.
 1889. Jan. 9. —Corresponding Member, Colorado Biological Association.
 1893. April 19.—Corresponding Member, Boston Society of Natural History.
 1893. Dec. 26.—Honorary Member (twelve in all), Société Entomologique de Bel-
gique, Brussels.
 1894. May 6. —Honorary Member, Feldman Collecting Social, Philadelphia.
 1895. June 1. —Honorary Member, Kansas Academy of Science, Topeka.
 1896. Oct. 7. —Honorary Member, Russian Entomological Society, St. Peters-
burg.
 1897. Mar. 24.—Doctor of Science, Western University of Pennsylvania, Pitts-
burg.

NOTE.—The preceding biographical notice has been read by Messrs. Charles Liebeck, Henry Skinner, M.D., H. W. Wenzel, J. H. B. Bland, Wm. J. Fox and E. T. Cresson. The list of questions contained in the Appendix to Francis Galton's "English Men of Science" was taken as a basis, and the endeavor has been to answer as many of these as possible. The information above given is based on many notes kindly furnished by Mrs. Lewis Haehnel, Dr. Horn's only surviving sister, on personal items contained in Dr. Horn's published papers, and those due to the kindness of Mr. Samuel Henshaw, of Cambridge, Mass. In many cases where Dr. Horn himself is the authority for a statement, this has been indicated by placing a small figure corresponding to the number of the paper quoted in Mr. Henshaw's Bibliography (*post.*). Reference has also been made to the following articles—'Biographical notices of Harrison Allen and George Henry Horn' by Edward J. Nolan, and 'Dr. Horn's contributions to Coleopterology' by John B. Smith, both addresses at a Memorial Meeting, and published in the Proceedings of the Academy of Natural Sciences, Philadelphia, Dec., 1897; Dr. Nolan's paper is of importance for its picture of the Academy as it was when Horn's work began; 'George Henry Horn' unsigned, but by Samuel

Henshaw, *Psyche*, Cambridge, Mass., for January, 1898; 'George Henry Horn' by John B. Smith, *Science*, New York, for Jan. 21 1898. The statements concerning the High School of Horn's time are drawn from the pamphlet, "The Semi-Centennial of the Central High School of Philadelphia" by various authors, published in 1888.

P. S.—After the greater part of the preceding biography had passed through the press, the following letter was received in reply to one of February 17th:

SAN FRANCISCO, CAL., April 15, 1898.

Mr. PHILIP P. CALVERT, Phila., Pa.

DEAR SIR:—I send you the military history of Dr. George H. Horn while on the Pacific coast during the war of the Rebellion. [Then follows a statement of the services and commissions held, already given.]

I first became acquainted with Dr. Horn at Fort Tejon, Cal., in October, 1863. Companies "B" and "G" of the 2nd Cal. Infantry relieved a Company of the 2nd Cal. Cavalry that had been stationed there. Dr. Horn was Surgeon, and the Doctor continued with us until I was promoted to Captain and ordered with the Company to Fort Yuma. Company B was commanded by Capt. Schmidt, a pompous German, and he being senior officer commanded the Post and his own company, of course. I, besides commanding my own Company G, was A. A. Q. M. and A. C. S., Post Adjutant and Post Treasurer. Dr. Horn used to laugh at my various duties. Besides, Capt. Schmidt or myself had to be officer of the day every other day. Capt. Schmidt suggested that the doctor be asked to act as officer of the day every third day. I told the Captain that it was not in the line of the doctor's duties, and the doctor was never asked, but I do not think he would have objected.

The doctor and myself had our Mess together. We enjoyed each other's company as much as any two men can. We were both fond of playing cribbage and often played till past midnight. In a match of a 1000 game up, there was only six difference, and that in the doctor's favor.

I accompanied the doctor many times hunting insects. We turned over large stones, striped dead bark from trees, turned over all the rotten logs we could find for miles around, and I got to be as great an enthusiast as himself. In this way we passed about eight months, the most pleasant of my life, and when we said our final good-bye, the doctor said "I don't know where I will get a partner that I will like as well." We corresponded, but I saw no more of him until he was finally mustered out in 1866.

I imagined the doctor was very lovable in his family relation from the tone and length of his letters to his sister and hers to him, and the "dear chum" letters between him and his little brother.

Dr. Horn stood very high at Head Quarters here as a Surgeon and Physician, as shown by his promotions and constant service.

He was strict in his duties and allowed no interference when he thought he was right, as the following incident will show. When the Regiment was on the march from Arizona to San Francisco to be mustered out, the Colonel, Thomas F. Wright, selected a place to camp. Dr. Horn went to the Colonel and told him

it was not a fit place to camp, being low and damp. After a great deal of talk and some hard words, the Colonel allowed the doctor to have his way and select a suitable place, and received the thanks of the officers and men. The Colonel never spoke to the doctor after that.

Excuse delay. Your letter found me in bed sick—have been in that condition for a month, then I had a relapse that laid me up a couple of weeks longer.

Yours truly,

JOHN E. HILL,

Late Captain 2nd Cal. Vol.

922 Van Ness Ave.

The Entomological Writings of George Henry Horn.

(1860—1896.)

WITH AN INDEX TO THE GENERA AND SPECIES OF
COLEOPTERA DESCRIBED AND NAMED.

BY SAMUEL HENSHAW.

While care has been taken to make this record complete and accurate mention of any omissions and errors that may be noticed will be welcomed.

In the list of published writings the chronologic order has been followed.

The systematic index to the genera and species of Coleoptera is arranged according to the plan followed when dealing with the Coleoptera of John L. and J. E. LeConte (Trans. Amer. Ent. Soc., 1881-82, vol. ix, p. 197-272). The first number following the name refers to the accompanying list of published writings, and the second to the page of the publication cited. Original generic names when different from those used here follow in brackets.

The types are, for the most part, in the Horn collection, now one of the valued possessions of the American Entomological Society.

Species marked with an * are fossil.

The alphabetical index refers to the list of published writings and used in combination with the systematic index affords ready access to the subjects discussed in Dr. Horn's entomological writings.

1. CHRONOLOGICAL LIST OF PUBLISHED WRITINGS.

1. Descriptions of new North American Coleoptera, in the cabinet of the Entomological Society of Philadelphia.

Proc. Acad. Nat. Sci. Phila., December, 1860, p. 569-571, pl. 8.

2. Notes on the habits of some coleopterous larvæ and pupæ.

Proc. Ent. Soc. Phila., July, 1861, vol. i, p. 28-30.

3. Observations on the habits of some coleopterous larvæ and pupæ.

Proc. Ent. Soc. Phila., September, 1861, vol. i, p. 43-44.

4. Monograph of the species of *Trogosita* inhabiting the United States.

Proc. Acad. Nat. Sci. Phila., February, 1862, p. 82-88.

5. Description of some new North American Coleoptera.
Proc. Ent. Soc. Phila., April, 1862, vol. i, p. 187-188.
6. Description of some new Cicindelidæ from the Pacific coast of the United States.
Proc. Acad. Nat. Sci. Phila., December, 1866, p. 394-397.
7. Descriptions of some new genera and species of Central American Coleoptera.
Proc. Acad. Nat. Sci. Phila., December, 1866, p. 397-401.
8. Notes on the habits of a few California Coleoptera.
Proc. Ent. Soc. Phila., January, 1867, vol. vi, p. 289-293.
9. On *Usechus lacerta* Motsch.
Proc. Ent. Soc. Phila., January, 1867, vol. vi, p. 293-294.
10. On *Rhagodera tuberculata*, Mann.
Proc. Ent. Soc. Phila., January, 1867, vol. vi, p. 294-296.
11. Some observations on *Phodaga alticeps*, Lec.
Proc. Ent. Soc. Phila., January, 1867, vol. vi, p. 296.
12. Description of a new *Pseudomorpha* from California, with notes on the Pseudomorphidæ.
Trans. Amer. Ent. Soc., June-July, 1867, vol. i, p. 151-154, pl. 3 in part.
13. On *Amphizoa insolens*, Lec.
Trans. Amer. Ent. Soc., July, 1867, vol. i, p. 154-158.
14. Notes on the *Zopheri* of the United States.
Trans. Amer. Ent. Soc., July, 1867, vol. i, p. 159-162.
15. Descriptions of new genera and species of western Scarabæidæ, with notes on others already known.
Trans. Amer. Ent. Soc., July, 1867, vol. i, p. 163-170, pl. 3 in part.
16. *Geotrupes* of Boreal America.
Trans. Amer. Ent. Soc., January, 1868, vol. i, p. 313-322.
(Cf., op. cit., p. 18, Proc.)
17. [The United States species of *Cicindela*.]
Trans. Amer. Ent. Soc., February, 1868, vol. i, p. 2-3, Proc.
18. [Note concerning *Dysmathes sahlbergi* Mannh.]
Trans. Amer. Ent. Soc., February, 1868, vol. i, p. 18, Proc.
19. Catalogue of Coleoptera from south-western Virginia.
Trans. Amer. Ent. Soc., August, 1868, vol. ii, p. 123-128.
20. New species of Coleoptera from the Pacific district of the United States.
Trans. Amer. Ent. Soc., August, 1868, vol. ii, p. 129-140.
21. [Characters of *Cossyphus*.]
Trans. Amer. Ent. Soc., December, 1869, vol. ii, p. 10, Proc.
- 21a. [*Cantharis*, *Acanthia* and other Hemiptera.]
Outlines of comparative anatomy and medical zoology. By Harrison Allen. Philadelphia, 1869, p. 147-153; 156-157.
22. Synopsis of the Parnidæ of the United States.
Trans. Amer. Ent. Soc., January-February, 1870, vol. iii, p. 29-42.
23. Notes on some genera of coprophagous Scarabæidæ of the United States.
Trans. Amer. Ent. Soc., February-March, 1870, vol. iii, p. 42-51.
24. Contributions to the coleopterology of the United States.
Trans. Amer. Ent. Soc., June, 1870, vol. iii, p. 69-97.
25. Descriptive catalogue of the species of *Nebria* and *Pelophila* of the United States.
Trans. Amer. Ent. Soc., June-September, 1870, vol. iii, p. 97-105.

26. On the species of *Oodes* and allied genera of the United States.
Trans. Amer. Ent. Soc., September, 1870, vol. iii, p. 105-109.
27. Description of the species of *Aphodius* and *Dialytes* of the United States.
Trans. Amer. Ent. Soc., September, 1870, vol. iii, p. 110-134, pl. 3 in part.
28. Descriptions of new species of Histeridæ of the United States.
Trans. Amer. Ent. Soc., September, 1870, vol. iii, p. 134-142, pl. 1.
29. Coleoptera.
Rec. Amer. Ent. for 1869, 1870, p. 38-46.
30. Revision of the Tenebrionidæ of America, north of Mexico.
Trans. Amer. Philos. Soc., 1870, vol. xiv, p. 353-404, pls. 14-15.
31. Synopsis of the species of *Corphyra*, Say, of the United States.
Trans. Amer. Ent. Soc., April, 1871, vol. iii, p. 278-283.
32. Synopsis of Aphodiini of the United States.
Trans. Amer. Ent. Soc., April-June, 1871, vol. iii, p. 284-297, pl. 3, in part.
33. Remarks on the species of the genus *Isomalus* Er. of the United States.
Trans. Amer. Ent. Soc., June, 1871, vol. iii, p. 297-299.
34. Descriptions of new species of Elateridæ, of the United States.
Trans. Amer. Ent. Soc., June-October, 1871, vol. iii, p. 299-324, pl. 4.
35. Descriptions of new Coleoptera of the United States, with notes on known species.
Trans. Amer. Ent. Soc., November-December, 1871, vol. iii, p. 325-344, pl. 3 in part.
36. Coleoptera.
Rec. Amer. Ent. for 1870, 1871, p. 13-19.
37. [Descriptions and figures of the early stages of *Agriotes mancus*.]
Can. Ent., January, 1872, vol. iv, p. 4-6.
38. Synopsis of the Malachiidæ of the United States.
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214. [Stridulating Coleoptera.]
Trans. Amer. Ent. Soc., 1889, vol. xvi, p. 12, Proc.
- 214a. [Remarks on effects of habitual use in the modification of an animal organization.]
Proc. Amer. Philos. Soc., December, 1889, vol. xxvi, p. 529.
215. The species of *Heterocerus* of Boreal America.
Trans. Amer. Ent. Soc., January, 1890, vol. xvii, p. 1-16, pl. 1.
(Cf. op. cit. vol. xvi, p. 9, 10, Proc.)
216. Notes on the species of *Ochthebius* of Boreal America.
Trans. Amer. Ent. Soc., January, 1890, vol. xvii, p. 17-26, pl. 2.
217. Notes on Coleoptera.
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218. A reply to Dr. C. V. Riley.
No imprint, [February, 1890.]
219. The "ultimate larva" of *Platypsillus*.
Ent. Amer., March, 1890, vol. vi, p. 55-56.
220. [New species of *Cychrus*.]
Ent. Amer., April, 1890, vol. vi, p. 71-72.
221. Notes on Elateridæ.
Ent. News, April, 1890, vol. i, p. 53-55.
222. [Synoptic table of *Anthophilax*.]
Ent. Amer., May, 1890, vol. vi, p. 98.

223. [Breeding habit of *Cænopæus palmeri*.]
Proc. Ent. Soc., Washington, May, 1890, vol. i, p. 252.
224. Notes on some Hydrobiini of Boreal America.
Trans. Amer. Ent. Soc., July–August, 1890, vol. xvii, p. 237–278, pl. 3–4,
pl. 9 in part.
225. A revision of the Sphæridiini inhabiting Boreal America.
Trans. Amer. Ent. Soc., August–November, 1890, vol. xvii, p. 279–314, pl.
9 in part.
226. Some notes on *Aræoschizus*.
Trans. Amer. Ent. Soc., November, 1890, vol. xvii, p. 339–343.
227. [Central American] Throscidæ [and] Eucnemidæ.
Biol. Centrali-Americana, Insecta, Coleoptera, vol. iii, pt. 1, November,
1890, p. 193–257, pl. 10.
228. The antennæ of Coleoptera.
Proc. Acad. Nat. Sci., Phila., November, 1889, p. 311.
229. [Form of *Ergates spiculatus* Lec.]
Ent. News, December, 1890, vol. i, p. 161.
230. *Trichodes ornatus* Say.
Ent. News, January, 1891, vol. ii, p. 6–8.
231. A monograph of the species of *Cryptohypnus* of Boreal America.
Trans. Amer. Ent. Soc., January–February, 1891, vol. xviii, p. 1–31, pl. 1
in part.
232. New species and miscellaneous notes.
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233. The species of *Agrilus* of Boreal America.
Trans. Amer. Ent. Soc., September–October, 1891, vol. xviii, p. 277–336, pl. 8.
234. Notes on *Calospasta* Lec.
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235. A good collection of *Agrilus* at the National Museum.
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236. Studies in Chrysomelidæ.
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237. Variations of color-markings in Coleoptera.
Ent. News, February, 1892, vol. iii, p. 25–28, pl. 1.
238. Notes on *Amara* s. g. *Triæna*.
Trans. Amer. Ent. Soc., February, 1892, vol. xix, p. 18–19.
239. A study of *Amara* s. g. *Celia*.
Trans. Amer. Ent. Soc., February–March, 1892, vol. xix, p. 19–40.
240. *Carabus nemoralis* Müll.
Ent. News, March, 1892, vol. iii, p. 60–61.
241. Random studies in North American Coleoptera.
Trans. Amer. Ent. Soc., March, 1892, vol. xix, p. 40–48.
242. *Dorcus parallelus* Say.
Ent. News, April, 1892, vol. iii, p. 73–74, pl. 3.
243. The Eumolpini of Boreal America.
Trans. Amer. Ent. Soc., July–August, 1892, vol. xix, p. 195–234.
244. The Galerucini of Boreal America.
Trans. Amer. Ent. Soc., April–June, 1893, vol. xx, p. 57–136, pl. 1 in part.
245. Miscellaneous coleopterous studies.
Trans. Amer. Ent. Soc., June, 1893, vol. xx, p. 136–144, pl. 1 in part.

246. *Amblychila cylindriciformis* Say.
Ent. News, November, 1893, vol. iv, p. 281-283.
247. A note on *Cryptohypnus*.
Ent. News, January, 1894, vol. v, p. 6-7.
248. [*Saprinus sulcatus*.]
Ent. News, January, 1894, vol. v, p. 14.
249. Synonymical notes.
Ent. News, February, 1894, vol. v, p. 41.
250. Note on *Platypsyllus*.
Ent. News, May, 1894, vol. v, p. 141.
251. *Cassida nebulosa* Linn.
Ent. News, May, 1894, vol. v, p. 146.
252. The Coleoptera of Baja California.
Proc. Cal. Acad. Sci., August, 1894, ser. 2, vol. iv, p. 302-449, pl. 7-8.
253. Notes on our Cassididæ.
Ent. News, September, 1894, vol. v, p. 224.
254. *Vesperoctenus flohri* Bates.
Ent. News, April, 1895, vol. vi, p. 114-115.
255. Studies in Coccinellidæ.
Trans. Amer. Ent. Soc., April-May, 1895, vol. xxii, p. 81-114, pl. 1-2.
256. [Synonymical notes.]
Ent. News, June, 1895, vol. vi, p. 179.
257. Coleoptera of Baja California. (Supplement I.)
Proc. Cal. Acad. Sci., July, 1895, ser. 2, vol. v, p. 225-259, pl. 20.
258. [Synonymical notes.]
Ent. News, December, 1895, vol. vi, p. 326.
259. A visit to Cambridge.
Ent. News, February, 1896, vol. vii, p. 49-50.
260. Review [Cambridge natural history. vol. v.]
Ent. News, February, 1896, vol. vii, p. 53-54.
261. Auguste Sallé.
Ent. News, June, 1896, vol. vii, p. 192.
262. [Julius Flohr.]
Ent. News, September, 1896, vol. vii, p. 203.
263. Coleoptera of Baja California. (Supplement II.)
Proc. Cal. Acad. Sci., September, 1896, ser. 2, vol. vi, p. 367-381.
264. The *Edemeridæ* of Boreal America.
Proc. Cal. Acad. Sci., September, 1896, ser. 2, vol. vi, p. 382-421.
265. [Note on Buprestidæ.]
Ent. News, October, 1896, vol. vii, p. 247.

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BURMEISTER'S TYPES OF ODONATA.

—BY—

PHILIP P. CALVERT.

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À

MONSIEUR LE BARON EDMOND DE SELYS-LONGCHAMPS,

SÉNATEUR,

MAÎTRE D'ODONATOLOGIE,

À LIÈGE, BELGIQUE,

EN FÉLICITATION DU QUATRE-VINGT-CINQUIÈME ANNIVERSAIRE DE

SA NAISSANCE,

CET OPUSCULE SUR LES ODONATES TYPES DE BURMEISTER EST

RESPECTUEUSEMENT DÉDIÉ PAR

L'AUTEUR.

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| | = <i>conjuncta Lec.*</i> |

* I am indebted to Mr. E. A. Schwarz for the following "SYNONYMICAL NOTE. From Dr. LeConte's very lucid original description of *Bryaxis conjuncta* it is evident that this name should be retained for the species which in the ♂ has strongly clavate antennæ, spinous anterior trochanters, etc. In his earlier studies on Pselaphids, Dr. Brendel became aware that there were two species confounded under *B. conjuncta*, but the new species characterized by him as *B. clavata* is precisely identical with *B. conjuncta* Lec., whereas what he supposed to be the true *B. conjuncta* is characterized by him as having, in the ♂, less clavate antennæ and unarmed trochanters. For reasons unknown to me all subsequent writers on Pselaphids, including Dr. LeConte himself, have adopted Brendel's nomenclature. The synonymy of the two species stands as follows:

1. *Bryaxis conjuncta* LeConte, Bost. Journ. Nat. Hist., vol. vi, 85, 1850.
conjuncta var. *clavata* Brendel, Proc. Ent. Soc. Phila., vol. v, 256, 1865.
clavata Brendel, Proc. Ent. Soc. Phila., vol. vi, 193, 1866.
brendelii Horn, Crotch's Check List, 36, 1874.
brendelii LeConte, Trans. Amer. Ent. Soc., vol. viii, 181, 1880.
brendelii Brendel, Bull. Lab. Nat. Hist. Iowa, vol. i, 274, t. 8, f. 47, 1890.
2. *Bryaxis conjuncta* Brendel, Proc. Ent. Soc. Phila., vol. vi, 193, 1866.
conjuncta LeConte, Trans. Amer. Ent. Soc., vol. viii, 181, 1880.
conjuncta Brendel, Bull. Lab. Nat. Hist. Iowa, vol. i, 273, t. 8, f. 46, 1890.

A new name has to be coined for the second species."—E. A. SCHWARZ.

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* A new name proposed for the apterous species from Margarita Island named *L. bicolor* (1894), unmindful of the winged species from New Mexico previously (1889) given the same name.

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* See Proc. Ent. Soc. Phila., vol. vi, p. xii, Proc.

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CORRIGENDA.

- Page xxv, No. 212, *for* p. 11 *read* p. 10.
- “ xxxviii, *Cychrus fulleri*, *for* 184 *read* 179.
Anchonoderus apicalis, *for* 38 *read* 360.
- “ xxxix, *Pseudomorpha behrensii*, *for* 27 *read* 24.
- “ xl, *Philhydrus hamiltoni*, *for* 248 *read* 249.
Helopeltis larvalis, *for* 139 *read* 137.
- “ xli, *Anisotoma merkeliana*, *for* 256 *read* 257.
- “ xlvi, *Bactridium fryi*, *for* 265 *read* 266.
- “ xlvii, *Allopogon villosus*, *for* 80 *read* 81.
- “ xlviii, *Cardiophorus edwardsii*, *for* 31 *read* 34.
- “ liv, *Ochodæus californicus*, *for* 259 *read* 257.
- “ lv, *Lachnosterna spreta*, *for* 251 *read* 250.
- “ lix, *Zabrotes semicinctus*, *for* 251 *read* 252.
- “ lx, *After Asida gabbii*, *insert* 109-152.